Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application.

1. (currently amended) [[A]] An algal cell which grows in [[the]] substantial absence of light, ~~said~~ the cell comprising chimeric DNA encoding a protein which will transport a catabolizable carbon source into the algal cell, wherein the algal cell without the chimeric DNA is a phototrophic cell. ~~would not grow under dark conditions in the absence of the chimeric DNA.~~

2. (original) The cell of claim 1, wherein the algal cell is a microalgal cell.

3. (original) The cell of claim 1, wherein the catabolizable carbon source is a monosaccharide or an oligosaccharide.

4. (original) The cell of claim 1, wherein the protein is a disaccharide transporter.

5. (original) The cell of claim 1, wherein the protein is a hexose transporter.

6. (currently amended) [[A]] An algal cell comprising chimeric DNA which encodes a protein that will transport a catabolizable carbon source into the algal cell, wherein the protein is expressed in an amount sufficient to transport into the cell adequate catabolizable carbon source to support heterotrophic growth of the cell.

7. (original) The cell of claim 6, wherein the algal cell is a microalgal cell.

8. (original) The cell of claim 6, wherein the catabolizable carbon source is a monosaccharide or an oligosaccharide.

9. (original) The cell of claim 6, wherein the protein is a disaccharide transporter.

10. (original) The cell of claim 6, wherein the protein is a hexose transporter.

11. (withdrawn- currently amended) A method of producing algal biomass comprising culturing algae in [[the]] substantial absence of light, ~~said~~ the algae being of a strain that is obligately phototrophic, wherein the algae further contain chimeric nucleic acid encoding a protein that, upon expression by the algae, transports a catabolizable carbon source into the algal cells.

12. (withdrawn) The method of claim 11, wherein the algae are microalgae.

13. (withdrawn- currently amended) The method of claim 11, wherein the algae are cultured in a fermentor.

14. (withdrawn) The method of claim 11, wherein the catabolizable carbon source is a monosaccharide or an oligosaccharide.

15. (withdrawn) The method of claim 11, wherein the protein is expressed in an amount sufficient to transport into the cell adequate catabolizable carbon to support heterotrophic growth of the cell.

16. (withdrawn) The method of claim 11, wherein the protein is a disaccharide transporter.

17. (withdrawn) The method of claim 11, wherein the protein is a hexose transporter.

18. (withdrawn- currently amended) A method for [[the]] heterotrophic conversion of cells of an organism selected from the group consisting of obligately

phototrophic marine organisms, prokaryotic, and eukaryotic algae, comprising ~~the steps of~~ (a) transforming the cells with DNA comprising a gene coding for a transporter of a catabolizable carbon source across the cell membrane, and (b) selecting transformed cells capable of growth on the catabolizable carbon source in the dark.

19. (withdrawn) The method of claim 18, wherein the organism is selected from marine algae.

20. (withdrawn) The method of claim 18, wherein the gene coding for a transporter of a catabolizable carbon source is coupled with a selectable gene, and after transformation, transformed cells are grown on media selective for the selectable gene before selecting cells capable of growth on the catabolizable carbon source in the dark.

21. (withdrawn) The method of claim 20, wherein the selectable gene confers resistance to an antibiotic on the transformed cells, and the selective media contains the antibiotic.

22. (withdrawn- currently amended) A method for selecting transformed cells from a cell population exposed to a transforming vector containing a gene of interest, ~~said~~ the method comprising

transforming a cell population, cells of ~~said~~ the population being unable to grow on a source of catabolizable carbon in the dark, with a transformation vector comprising a gene of interest and a gene enabling growth of the cells on the source of catabolizable carbon in the dark;

selecting cells capable of growth in the dark; and

testing the selected cells to determine whether the selected cells also contain the gene of interest.

23. (new) The cell of claim 1, wherein the substantial absence of light is total darkness.

24. (new) The cell of claim 1, wherein the algal cell is a marine algal cell.

25. (new) The cell of claim 24, wherein the algal cell is a Cyanophyta, Chlorophyta, Rhodophyta, Phaeophyta, Baccilariophyta, Dinophyta, Chrysophyta, Cryptophyta, or Euglenophyta cell.

26. (new) The cell of claim 25, wherein the algal cell is a Baccilariophyta cell.

27. (new) The cell of claim 26, wherein the algal cell is a *Nitzschia*, *Navicula*, *Thalassiosira*, or *Phaeodactylum* cell.

28. (new) The cell of claim 27, wherein the algal cell is *Phaeodactylum tricornutum*.

29. (new) The cell of claim 1, wherein the chimeric DNA further comprises a light harvesting promoter.

30. (new) The cell of claim 29, wherein the light harvesting promoter is a fucoxanthin chlorophyll binding protein (*fcp*) promoter.

31. (new) The cell of claim 30, wherein the *fcp* promoter is *fcpA*, *fcpB*, *fcpC*, or *fcpE*.

32. (new) The cell of claim 1, wherein the catabolizable carbon source is a sugar, fatty acid, amino acid, pyruvate, glycerol, or citrate.

33. (new) The cell of claim 32, wherein the catabolizable carbon source is a sugar.

34. (new) The cell of claim 33, wherein the sugar is sucrose.

35. (new) The cell of claim 33, wherein the sugar is glucose.

36. (new) The cell of claim 4, wherein the disaccharide transporter is a sucrose transporter.

37. (new) The cell of claim 5, wherein the hexose transporter is a glucose transporter.

38. (new) The cell of claim 5, wherein the hexose transporter is Glut1.

39. (new) The cell of claim 5, wherein the hexose transporter is Hup1.

40. (new) The cell of claim 6, wherein the algal cell is a marine algal cell.

41. (new) The cell of claim 40, wherein the algal cell is a Cyanophyta, Chlorophyta, Rhodophyta, Phaeophyta, Baccilariophyta, Dinophyta, Chrysophyta, Cryptophyta, or Euglenophyta cell.

42. (new) The cell of claim 41, wherein the algal cell is a Baccilariophyta cell.

43. (new) The cell of claim 42, wherein the algal cell is a *Nitzschia*, *Navicula*, *Thalassiosira*, or *Phaeodactylum* cell.

44. (new) The cell of claim 43, wherein the algal cell is *Phaeodactylum tricornutum*.

45. (new) The cell of claim 6, wherein the chimeric DNA further comprises a light harvesting promoter.

46. (new) The cell of claim 45, wherein the light harvesting promoter is a fucoxanthin chlorophyll binding protein (*fcp*) promoter.

47. (new) The cell of claim 46, wherein the *fcp* promoter is *fcpA*, *fcpB*, *fcpC*, or *fcpE*.

48. (new) The cell of claim 6, wherein the catabolizable carbon source is a sugar, fatty acid, amino acid, pyruvate, glycerol, or citrate.

49. (new) The cell of claim 48, wherein the catabolizable carbon source is a sugar.

50. (new) The cell of claim 49, wherein the sugar is sucrose.

51. (new) The cell of claim 49, wherein the sugar is glucose.

52. (new) The cell of claim 9, wherein the disaccharide transporter is a sucrose transporter.

53. (new) The cell of claim 10, wherein the hexose transporter is a glucose transporter.

54. (new) The cell of claim 10, wherein the hexose transporter is Glut1.

55. (new) The cell of claim 10, wherein the hexose transporter is Hup1.